7708

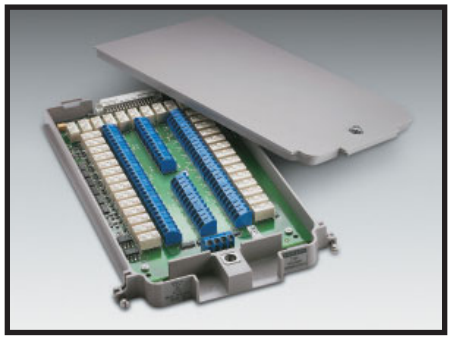
40-channel Differential Multiplexer Module

with Automatic CJC and Screw Terminals

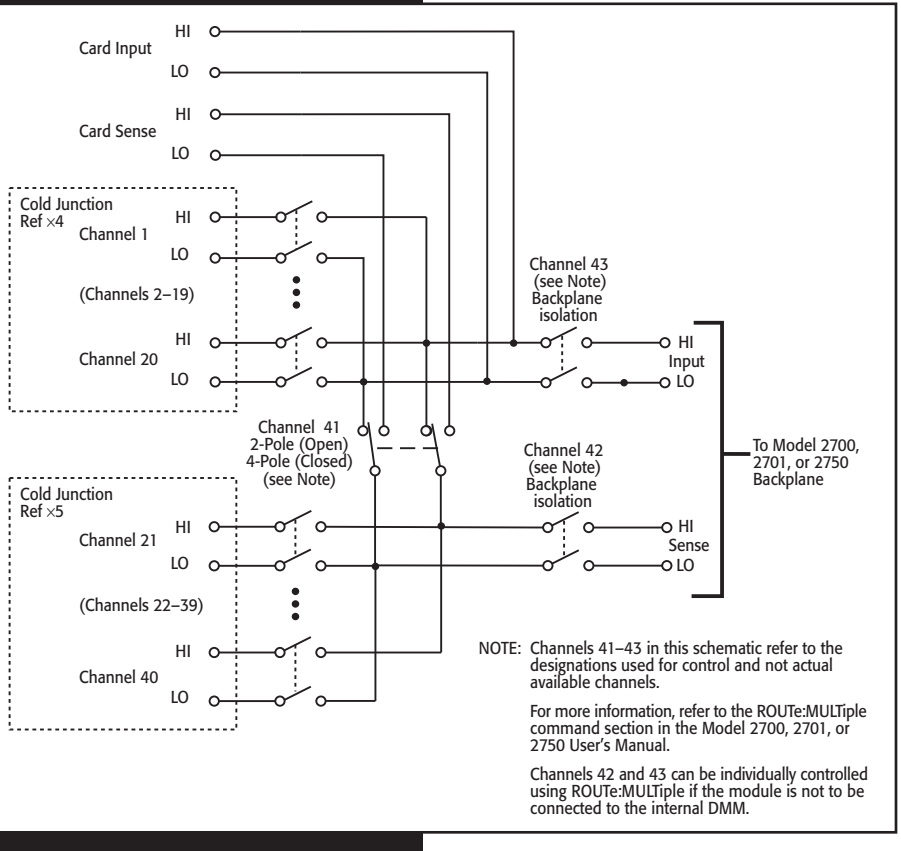
- **40 differential channels for general-purpose measurements**
- **Two- or four-wire measurements**
- **300V, 1A capacity for voltage channels; 60W, 125VA**
- **Oversize screw terminal connection blocks are standard for easier connection**
- **Relay closures stored in onboard memory**

Ordering Information

7708 **40-channel Differential Multiplexer Module with Automatic CJC and Screw Terminals**



The Model 7708 plug-in module offers 40 channels of 2-pole or 20 channels of 4-pole multiplexer switching that can be configured as two independent banks of multiplexers. The built-in CJC sensors automatically linearize thermocouples, making the Model 7708 ideal for RTD, thermistor, and thermocouple temperature applications. It is also well suited for mixed-signal measurement applications that require multi-point monitoring, such as environmental stress screening.



NOTE: Channels 41–43 in this schematic refer to the designations used for control and not actual available channels.

For more information, refer to the ROUTe:MULTiple command section in the Model 2700, 2701, or 2750 User's Manual.

Channels 42 and 43 can be individually controlled using ROUTe:MULTiple if the module is not to be connected to the internal DMM.

CAPABILITIES

CHANNELS 1–40: Multiplex one of 40 2-pole or one of 20 4-pole signals into DMM.

INPUTS

MAXIMUM SIGNAL LEVEL:

Channels (1–40): 300V DC or rms, 1A switched, 60W, 125VA maximum.

CONTACT LIFE (typ): $>10^5$ operations at max. signal level. $>10^8$ operations no load[1].

[1] Open thermocouple detector on during thermocouple measurements. Minimum signal level 10mV, 10μA.

CONTACT RESISTANCE: <1Ω at end of contact life.

CONTACT POTENTIAL:
<±500nV typical per contact, 1μV max.
<±500nV typical per contact pair, 1μV max.

OFFSET CURRENT: <100pA.

CONNECTOR TYPE: Screw terminal, #20 AWG wire size.

ISOLATION BETWEEN ANY TWO TERMINALS: $>10^{10}$Ω, <100pF.

ISOLATION BETWEEN ANY TERMINAL AND EARTH: $>10^9$Ω, <200pF.

CROSS TALK (10MHz, 50Ω Load): <–40dB.

INSERTION LOSS (50Ω Source, 50Ω Load): <0.1dB below 1MHz. <3dB below 2MHz.

COMMON MODE VOLTAGE: 300V between any terminal and chassis.

TEMPERATURE ACCURACY USING INTERNAL CJC: 1.0°C (see mainframe specification for details).

GENERAL

40 CHANNELS: 40 channels of 2-pole relay input. All channels configurable to 4-pole.

RELAY TYPE: Latching electromechanical.

ACTUATION TIME: <3ms.

FIRMWARE: Specified for Model 2700 rev. B02, 2701 rev. A01, and 2750 rev. A01 or higher.

ENVIRONMENTAL

OPERATING ENVIRONMENT: Specified for 0°C to 50°C. Specified to 80% R.H. at 35°C.

STORAGE ENVIRONMENT: –25°C to 65°C.

WEIGHT: 0.52kg (1.16 lb).

ACCESSORIES AVAILABLE

7401	Type K Thermocouple Wire, 30.5m (100 ft).

SERVICES AVAILABLE

7708-3Y-EW	1-year factory warranty extended to 3 years from date of shipment

Use with Integra Series mainframes: 2700, 2701, 2750

DIGITAL MULTIMETERS & SYSTEMS